

Remarks and Arguments

Claims 2-7 remain pending in this application.

Rejections under 35 U.S.C. § 103

Claims 2-7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,929,836 (“Kikuchi”) in view of U.S. Patent No. 5,656,719 (“Stibal”). The Examiner alleges that Kikuchi teaches a method of compression molding involving extruding a polyester resin, cutting the resin into portions, and transporting the resulting resin lump to a compression molding device. The Examiner admits that Kikuchi does not disclose a continuous process and turns to Stibal for allegedly teaching a method of making preforms by continuously flowing a polyethylene terephthalate melt from a post-condensation reactor into a molding tool, which may be for injection molding, fiber spinning, or an extruder. Applicants respectfully traverse this rejection as follows.

Kikuchi teaches that preforms are typically formed by injection molding. (Kikuchi at col. 1, ll. 48-50.) A preform has a tubular shape in which the center of the bottom portion has a gate portion forming an inflow opening through which resin flows at the time of injection molding. (*Id.* at col. 2, ll. 2-10.) Kikuchi asserts a problem with the injection molding process in that turbulence is generated from resin flow at the gate portion or around its vicinity. (*Id.* at col. 2, ll. 11-15.) This turbulence at the gate portion causes a whitening of the preform, which upon biaxial stretch blow molding coupled with the general cooling inefficiency when forming the container, results in poor appearance characteristics such as whitening of the gate in the container. (*Id.* at col. 2, ll. 15-34.) Kikuchi seeks to prevent this flow by molding the preforms via compression molding, where discrete lumps of polymer are transported to a compression molding machine.

In contrast, Stibal focuses on the technical problem of reducing the acetaldehyde content of polyester bottles. (Stibal at col. 1, ll. 23-25.) When polyester granules are melted in an injection molding extruder, the acetaldehyde content increases due to shear and high temperatures, which cause thermal decomposition and formation of acetaldehyde. (*Id.* at col. 2, lines 34-39.) According to Stibal, prior art attempts to solve this problem result in worsening of flow properties of the melt during injection molding,

or excess oxidative processes of the melt due to exposure of the melt to air at elevated temperatures. (*Id.* at col. 3, lines 4-9 and 17-22.)

Stibal proposes to solve the problem by using a condensation injection molding process from a polyethylene terephthalate melt and/or its copolyesters having a reduced acetaldehyde content under vacuum at elevated temperatures in a melt post-condensation reactor, followed by immediately guiding the melt to an injection molding tool for manufacturing the preforms. (*Id.* at col. 3, lines 32-45.) Stibal states that this process leads to less acetaldehyde formation in comparison to present day process “because of the omission of the re-melting process with its intensive shearing action.” (*Id.* at col. 6, lines 5-8.)

The skilled person would not have simply applied the continuous process of Stibal to the compression molding process of Kikuchi. Such a change would result in significant changes in the manufacturing line. For example, Stibal describes the following stages/devices:

- a polyester melt flow;
- a continuously operating screw post-condensation reactor for increasing the intrinsic viscosity;
- a vacuum system for the removal of volatile reaction products;
- a melt flow of bottle low acetaldehyde content;
- a device for continuous removal of the melt flow and charging the injection molding tool, e.g., a double piston system;
- an injection molding tool; and
- removal of bottle preforms.

(Stibal at col. 4, line 50 to col. 5, line 7.) One skilled in the art would readily appreciate that the injection molding of Stibal is an intermittent process, whereas synthesis of the polymer and the resulting melt flow is continuous. To reconcile this, Stibal incorporates a "double piston" device to allow one piston to fill while the other is firing. Thereby, Stibal's equipment is designed to match the continuous melt flow process with the intermittent process of injection molding.

Kikuchi does not contemplate any need for a process for preparing a polymer flow to be directed continuously to a compression mold. Kikuchi does not describe how one would coordinate a continuous melt flow with a compression molding process. Thus, the skilled artisan would not add Stibal's process to Kikuchi's compression molding as it would involve significant changes to the manufacturing line, e.g., one skilled in the art would not use a double piston system to deliver polymer to a compression mold. Neither Kikuchi or Stibal teach one skilled in the art how to convert the manufacturing line that includes a device for delivering melt flow to an injection mold, to one that includes a device for delivering a melt flow to a compression mold.

Accordingly, Applicants respectfully submit that a *prima facie* case of obviousness has not been established in view of Kikuchi and Stibal and request withdrawal of these rejections.

RECONSIDERATION

It is believed that all claims of the present application are now in condition for allowance.

Reconsideration of this application is respectfully requested. If the Examiner believes that a teleconference would expedite prosecution of the present application the Examiner is invited to call the Applicants' undersigned attorney at the Examiner's earliest convenience.

Any amendments or cancellation or submissions with respect to the claims herein is made without prejudice and is not an admission that said canceled or amended or otherwise affected subject matter is not patentable. Applicants reserve the right to pursue canceled or amended subject matter in one or more continuation, divisional or continuation-in-part applications.

To the extent that Applicants have not addressed one or more assertions of the Examiner because the foregoing response is sufficient, this is not an admission by Applicants as to the accuracy of such assertions.

Please grant any extensions of time required to enter this response and charge any fees in addition to fees submitted herewith that may be required to enter/allow this

response and any accompanying papers to our deposit account 02-3038 and credit any overpayments thereto.

Respectfully submitted,

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